

### **Remarks**

The Applicants have amended the specification to place it into better form for examination and also in accordance with the Examiner's helpful suggestion with respect with decitex. The Applicants note with appreciation the suggested locations for the changes. However, the Applicants could not find corresponding paragraphs in the Applicants' specification. Nonetheless, the Applicants amended paragraphs [0013], [0046], [0048], [0056], [0092], [0095] and [0097]. Withdrawal of the objection is respectfully requested.

The title has been amended to the title on the English's translation of the specification.

Claims 33 and 38 stand objected to over minor informalities. The Applicants have accordingly amended both of Claims 33 and 38 per the Examiner's helpful suggestion.

Claims 40-48 stand rejected under 35 U.S.C. §112 as being indefinite. The Applicants again note with appreciation the Examiner's helpful comments with respect to the phrase "or the like." The Applicants do not see that phrase in those rejected claims. Nonetheless, Claims 39-48 contain "leather-like" sheet. The Applicants assume that the rejection is directed to that phrase as opposed to the "or the like" phrase. Thus, the Applicants have amended those claims to remove "leather-like" and substitute "artificial leather." Those skilled in the art are well aware that leather-like sheets may be known as artificial leather. This is nonetheless explicitly set forth in the Applicants' specification on page 24, paragraph [0058], for example. Entry into the official file is respectfully requested.

The Applicants have made a number of other changes to Claims 33, 39 and 40. For example, Claim 33 has been amended to recite needle punching "at a punching density of 500 needles cm<sup>2</sup> or more" and that the ultra-fine fibers are entangled with each other. Support may be found in the Applicants' specification on page 18, paragraph [0049]. Also, Claim 33 has been amended to recite

that the hydro-entanglement is performed “after forming the ultra-fine fibers.” Support may be found on page 19, paragraph [0051].

Claim 39 has also been amended to recite a sheet comprising a nonwoven fabric and substantially made of a fiber material of non-elastic polymer. This change is made because of a translation error from the original PCT application. Thus, the Applicants have amended the specification on page 5, paragraph [0014] to correct the error. Similar changes have been made on page 24, paragraph [0058] and page 34, paragraph [0085]. The Applicants also enclose copies of the corresponding paragraphs in Japanese for those paragraphs together with a certified English translation of those paragraphs. Claim 39 has also been amended to recite that the ultra-fine fibers are entangled. Support is located throughout the specification such as in paragraph [0053], for example. Entry of the amendment to Claim 39 and the changes to the specification into the official file are respectfully requested.

Claim 40 has further been amended to recite that the artificial leather sheet is substantially made of fiber material and the ultra-fine fibers are entangled with each other. A portion of this subject matter was taken from Claim 41 which has been cancelled. The entanglement portion can be seen throughout the disclosure such as in paragraph [0053], for example. Entry of the change to Claim 40 is also respectfully requested.

Claims 40-42 and 45-48 stand provisionally rejected for obviousness-type double patenting over Claim 1 of co-pending application 10/522,519. The Applicants respectfully submit that the rejection is now moot with respect to Claim 41. The Applicants note that this is a provisional rejection and need not be dealt with substantively at this time.

However, the Applicants respectfully submit that Claims 40, 42 and 45-48 are not obvious over Claim 1 of the '556 publication. In that regard, Claim 40 now recites an artificial leather sheet

substantially made of a fiber material. This means that the artificial leather sheet does not substantially contain an elastomeric material such as polyurethane which is typical of conventional artificial leather sheets. In other words, the fact that the artificial leather sheet of Claim 40 is made substantially of fiber material as opposed to being substantially made of elastomer as in the case of conventional artificial leathers, differentiates Claims 40, 42 and 45-48 over the '556 publication. This is because the '556 publication discloses a conventional artificial leather sheet that includes ultra-fine fibers and an elastomer such as polyurethane. Thus, the Applicants respectfully submit that Claims 40, 42 and 45-48 lead those skilled in the art away from the teachings of the '556 publication because Claims 40, 42 and 45-48 require a sheet that is substantially made of a fiber material. Withdrawal of the rejection is respectfully requested.

Claims 29-36 and 38-46 stand rejected under 35 U.S.C. §102 over Mimura. The Applicants respectfully submit that the rejection is now moot with respect to cancelled Claim 41. The Applicants note with appreciation the Examiner's detailed comments hypothetically applying Mimura to Claims 29-36, 38-40 and 42-46. The Applicants nonetheless respectfully submit that Mimura fails to disclose, either explicitly or implicitly, all of the subject matter set forth in Claims 29-36, 38-40 and 42-46. Reasons are set forth below.

The Applicants first note that Claim 33 highlights the difference between the fibers likely to be entangled by needle punching and the fibers likely to be entangled by hydro-entanglement. That method as described in paragraph [0056] of the specification produces excellent nonwoven fabric as defined in Claim 29. In other words, composite fibers of 1 to 10 decitex are first sufficiently entangled by needle punching at a punching density of 500 needles/cm<sup>2</sup> or more to produce a nonwoven fabric containing composite fiber. Then, the composite fibers are converted into bundles of ultra-fine fibers of 0.0001 to 0.5 decitex. At least substantially all of the ultra-fine fibers are

entangled with each other by hydro-entanglement. The nonwoven fabric obtained by such a method has a high quality hand and physical properties as defined in Claim 29 because at least substantially all of the ultra-fine fibers are highly entangled with each other.

Having at least substantially all of the ultra-fine fibers highly entangled with each other is thus very important. This may be seen in the Applicants' specification on page 22, lines 10-16, for example. Claims 29, 33, 39 and 40 have thus been amended to recite that at least substantially all of the ultra-fine fibers are entangled with each other.

In sharp contrast, such a highly entangled nonwoven fabric is not obtained by the methods of Mimura. Mimura discloses a method for producing a nonwoven fabric comprising needle punching and hydro-entanglement. However, Mimura does not disclose hydro-entanglement after conversion of composite fibers into bundles of ultra-fine fibers. Hydro-entanglement to entangle the composite fibers with the web in Mimura is performed simultaneously with conversion of composite fibers into bundles of ultra-fine fibers. This is disclosed at column 6, lines 50-55. However, resulting ultra-fine fibers are not entangled with each other according to that method --- they are just entangled with respect to the web. This occurs because Mimura does not completely split the composite fibers. This is seen in column 14 at lines 8-10 wherein the composite fibers are only 95% split. The remaining unsplit 5% acts as an "anchor" and does not permit the ultra-fine fibers to entangle to a meaningful degree.

The Applicants enclose two figures that demonstrate the difference. Fig. 1 shows at least substantially all of the ultra-fine fibers entangled with each other in accordance with the Applicants' claims. Fig. 2 shows the ultra-fine fibers not so entangled. They remain substantially intact as bundles of ultra-fine fibers. Such bundles are thus present in the Mimura nonwoven fabrics.

The Applicants therefore respectfully submit that a nonwoven fabric which has the physical properties defined in Claim 29 is not obtained by Mimura. The rejection states that Mimura discloses that the tensile strength of one ultra-fine fiber sheet impregnated with polyurethane is 116.7N and polyurethane does not contribute to the tenacity of the fabric. The Applicants respectfully submit that this is mere speculation not supported by facts on the record. The tensile strength of a fabric impregnated with polyurethane is indeed influenced by the polyurethane. The Applicants enclose a reference document which indicates that the tensile strength of a fabric impregnated with polyurethane is influenced depending on the type of polyurethane. A partial English translation is also enclosed for the Examiner's convenience. That document reveals that the tensile strength of a fabric impregnated with polyurethane is influenced depending on the variety of the polyurethane. The document particularly states: "In Examples 2, 3 and also in Comparative Examples 1 to 5, sheet-like articles were obtained in the same way as Example 1, except using polyurethane elastomers synthesized with polyurethane compositions described in Table 1." Also, as shown in Table 1, the strength of the fabrics impregnated with a variety of polyurethanes is different from each other.

With respect to Claim 39, Mimura discloses a conventional leather-like sheet containing polyurethane as described in Claim 4. On the other hand, the sheet of Claim 39 is substantially made of a fiber material and does not substantially contain elastomer such as polyurethane. Furthermore, the sheet of Claim 39 is also different in that at least substantially all of the ultra-fine fibers are entangled with each other. As mentioned above, such a fabric is not obtained by Mimura because the fibers just entangle with the web.

With respect to Claims 40 and 42-46, likewise, the sheet is different from that of Mimura at the point that it is substantially made of a fiber material and does not substantially contain elastomer

such as polyurethane. Further, Claim 40 requires that at least substantially all of the ultra-fine fibers are entangled. They are not so entangled in Mimura because they remain as bundles which entangle with the web.

The Applicants respectfully submit that Mimura fails to explicitly or implicitly disclose all the subject matter set forth in Claims 29-36, 38-40 and 42-46. Withdrawal of the rejection is respectfully requested.

Claims 1-36 and 38-46 stand rejected under 35 U.S.C. §103 over Mimura. The Applicants respectfully submit that the rejection is moot with respect to cancelled Claims 1-28 and 41. Nonetheless, the Applicants respectfully submit that Mimura is inapplicable to the remaining claims for the reasons set forth below.

The rejection states that Mimura discloses requisite teachings such that fabrics, methods of making and leather-like sheets according to Claims 29-36, 38-40 and 42-46 can be made. The Applicants again respectfully submit that the facts do not support such speculation. As mentioned above, the Applicants' methods are different from Mimura and fabrics or sheets according to Claims 29-36, 38-40 and 42-46 are not made by Mimura. The Applicants provide a leather-like sheet having a sufficient quality, hand and physical properties and also excellent recyclability and yellowing resistance, even though those sheets do not substantially contain elastomer such as a polyurethane (paragraph [0011] of the specification). Mimura does not suggest this. As mentioned above, conventional leather-like sheets contain ultra-fine fibers and an elastomer such as polyurethane. Hence, one skilled in the art would not make a leather-like sheet without polyurethane based on Mimura.

The Applicants respectfully submit that Mimura discloses a classic conventional artificial leather containing substantial quantities of an elastic polymer such as polyurethane. This is sharply

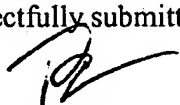
contrasted to Claims 29-36, 38-40 and 42-46 which are in the opposite direction because the subject matter of those claims does not require substantial quantities of elastic polymer and, instead, relies on substantial quantities of fiber material. Therefore, Mimura leads one skilled in the art away from those rejected claims. Withdrawal of the rejection is respectfully requested.

Claim 37 stands rejected under 35 U.S.C. §103 over the hypothetical combination of Honda with Mimura. The Applicants respectfully submit that Honda fails to cure the deficiencies set forth above with respect to Mimura. Thus, even if one skilled in the art were to make the hypothetical combination, the subject matter from that combination would still not result in the Applicants' subject matter as recited in Claim 37. Withdrawal of the rejection is respectfully requested.

Claims 47 and 48 stand rejected under 35 U.S.C. §103 over the hypothetical combination of Katayama with Mimura. The Applicants respectfully submit that Katayama fails to cure the deficiencies set forth above with respect to Mimura. Thus, even if one skilled in the art were to make the hypothetical combination, the subject matter from that combination would still not result in the Applicants' subject matter as recited in Claims 47 and 48. Withdrawal of the rejection is respectfully requested.

In light of the foregoing, the Applicants respectfully submit that the entire application is now in condition for allowance, which is respectfully requested.

Respectfully submitted,



T. Daniel Christenbury  
Reg. No. 31,750  
Attorney for Applicants

TDC/as  
(215) 656-3381